PAN Germany
Pestizid Aktions-Netzwerk e.V.



Stop Pesticide Poisonings!

A time travel through international pesticide policies

2nd updated and extended edition

A healthy world for all.
Protect humanity and the environment from pesticides. Promote alternatives.

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Impressum

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Stop Pesticide Poisonings!

Summary

„Stop Pesticide Poisonings" depicts why a growing number of individuals and organiations no longer believe that training can achieve so called „safe use" of hazardous pesticides. Instead, many bodies call for a progressive ban of hazardous pesticides and support a systematic phase-in of agro-ecological approaches to produce food and fibre and to manage plant pests and diseases in agriculture. Stop Pesticide Poisonings takes the reader on a journey through the years since pesticide poisonings in developing countries first came to international attention. It highlights the global efforts to solve pesticide-related problems, and looks behind the statements and statistics of dangerous pesticide use and poisonings in developing countries.

The key message of Stop Pesticide Poisonings is that „safe use of highly hazardous pesticides" is not possible, especially in developing countries. It suggests the urgent need for a progressive ban of highly hazardous pesticides, while phasing in sustainable, ecosystem-based plant production systems.

Actions need the support not only of governments, but also of the whole fabric of society: particularly producers, traders and consumers of agricultural goods. 'A call for action' highlights actions that governments, the pesticide industry and food and fibre producers, processors and distributors should undertake to contribute to the development of a less toxic agricultural system. Consumers can have a strong influence by calling on those actors to increase safety within the food and fibre chain. A particular focus should be on those who suffer most: small scale farmers and agricultural workers who live in extremely unsafe and poor conditions.

Carina Weber, September 2014


Pesticides
are undermining
our children's health
and intelligence.[1]

A time travel through three decades of international pesticide policies

An influential book opens eyes and triggers action

1981

The problems of pesticides in developing countries became an international public issue about three decades ago, largely triggered by publication of the *Circle of Poison* in 1981. It was written by two investigative journalists, David Weir and Marc Shapiro, and presented facts and figures about pesticide-related problems. For the first time, pesticide victims in developing countries had a voice.

For the first time, pesticide victims in developing countries had a voice.

The two authors followed the trail of how pesticides produced and restricted in the global North are exported to poor countries, where they are sold indiscriminately to untrained farmers who lack appropriate personal protective equipment. They reported how pesticides cause widespread sickness and death in Africa, Asia and Latin America. And they recorded how these pesticides come back to industrialised countries in the Global North as residues in food and feed, where they can cause harm to the health of consumers. At the end of their book Weir and Shapiro asked people all over the world to help break this circle of poison.

The *Circle of Poison* was a key stimulus for founding the global Pesticide Action Network (PAN) in 1982. PAN undertook to address human and environmental health problems caused by aggressively advertised and marketed pesticide products for chemically intensive agricultural systems.

A PAN activist calls for tougher standards

1982

One year later, in 1982, another influential book was published. The author, David Bull, was one of the first activists of the international PAN. *A Growing Problem: Pesticides and the Third World poor* detailed the scale of health and environmental problems in developing countries caused by pesticides. It stressed the urgency of carrying out effective action to counter the widespread ill-health and environmental distress being caused by pesticides.

PAN was founded and urged the FAO to produce a model code of practice on international trade in pesticides and pesticide use.

At that time many developing countries had no plant protection legislation. David Bull and other PAN activists urged the FAO to produce a model code of practice on international trade in pesticides and pesticide use. They urged governments to adopt appropriate pesticide legislation with effective implementation and monitoring. Legislation and good regulatory standards were seen as the first step to counter pesticide problems.

Many government representatives believed that the „safe use“ of hazardous pesticides would be possible if all countries passed legislation and took care that it was followed by those distributing, handling, applying or disposing of pesticides.

But national legislation proved to be difficult to target and implement. To overcome the increasingly dramatic impacts and legacies of chemical-intensive pest management in developing countries, government representatives and experts called for global standards to assist implementation.

1985

Global voluntary standards adopted to stop pesticide poisonings

The Code of Conduct and its implementing guidelines provide the most comprehensive international standards to address pesticide problems.

After intensive discussions and negotiations the FAO adopted the *International Code of Conduct on the Distribution and Use of Pesticides.* This Code of Conduct established standards for all public and private entities engaged in, or associated with, the distribution and use of pesticides. FAO recommended that all FAO Member Nations promote the Code of Conduct in the interest of safer and more efficient use of pesticides. At that time, and still today, the Code of Conduct and its implementing guidelines provide the most comprehensive international standards to address pesticide problems. Although voluntary, the Code has broad support of governments, the private sector and public interest groups including PAN. Since its adoption in 1985 the Code has served as the globally accepted standard for pesticide management and protection of human health and the environment. The Code promotes Integrated Pest Management as an effective alternative means of pest management. The World Health Organisation (WHO) has adopted the Code of Conduct as a guideline for public health pesticides, and promotes the use of Integrated Vector Management (IVM), where possible, as an effective alternative to pesticides in public health control strategies. The Code has been updated several times and in 2013 its name was changed to *International Code of Conduct on Pesticide Management*.[2]

A raft of programmes aim to make pesticide use „safe“

1990s

Since the 1980s the golden bullets in the fight against pesticide poisonings in developing countries have been:

- pesticide legislation on distribution, use and disposal
- pesticide registration to make sure that only properly tested and approved pesticides are sold
- training in safe and effective pesticide use.

The aim of these initiatives has been to apply strategies and approaches adopted in industrialised countries to address problems in developing countries.

Today nearly all countries have put in place pesticide legislation. Many programmes aim to help developing countries to properly register pesticides for distribution and use. And millions of farmers have been trained in ‘safe’ handling, use and disposal of pesticides by governmental organisations, aid agencies, the FAO, the pesticide industry and other private sector bodies, and by civil society organisations. But all these activities have not stopped the pesticide poisonings.

Millions of farmers have been trained in „safe“ handling, use and disposal of pesticides...

The Earth Summit in Rio de Janeiro adopts a precautionary approach

1992

In 1992 the United Nations Conference on Environment and Development (the Earth Summit) took place in Rio de Janeiro. It was an unprecedented UN conference in terms of its size and the scope of concerns. The 172 countries represented made important agreements about the environment and sustainable development. One of the resulting documents was *Agenda 21* – the United Nations Programme of Action to halt and reverse the effects of environmental degradation. *Agenda 21* called on all country governments to:

- undertake national surveys to establish baseline information on the use of pesticides
- document the effects of pesticides on human health and environment
- establish risk reduction programmes
- become active to overcome pesticide related problems.

The key document – *Rio Declaration on Environment and Development* – called for the precautionary approach and encouraged action to prevent harm without waiting for scientific evidence of the causes of adverse effects:

> *“Principle 15*
>
> *In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.“*[3]

172 countries represented at the Earth Summit made important agreements to establish pesticide risk reduction programmes.

2002

„Safe use of pesticides“ becomes an ostracized term

Widespread doubts emerged about whether “safe use” of highly hazardous pesticides was possible in developing countries. The term was dropped from the 2002 revision of the International *Code of Conduct on the Distribution and Use of Pesticides*. The revised Code began to address the importance of reducing and eliminating pesticide hazards. It recognised that major weaknesses of pesticide management still existed, stating that:

> *„there are still major weaknesses in certain aspects of pesticide management, predominantly in developing countries. For instance, national pesticide legislation is not widely enforced due to lack of technical expertise and resources, highly hazardous or sub-standard pesticide formulations are still widely sold; and end-users are often insufficiently trained and protected to ensure that pesticides can be handled with minimum risk.“*

2004

International Conventions adopted to fight pesticide hazards

The Stockholm Convention aims to eliminate production and use of certain pesticides which are defined as Pesistent Organic Pollutants(POPs).

The two most important internationally binding regulations dealing with pesticides both became effective in 2004: The Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and the Stockholm Convention on Persistent Organic Pollutants (POPs).

The Rotterdam Convention says that chemicals / pesticides which have been banned, withdrawn or severely restricted in a defined number of countries should only be exported to a country if the importing country’s government has been informed of the reasons for the regulatory action and has given positive prior consent to the importation of the chemical or pesticide. The Rotterdam Convention is an early warning system on international trade in hazardous chemicals and pesticides.

In comparison, the Stockholm Convention aims to eliminate production and use, stockpiles – and where possible presence in the environment – of certain chemicals / pesticides which are defined as POPs.

The limitations of these two international conventions[4] are that:

- they are effective for only a small number of highly hazardous pesticides
- they mainly cover pesticides which were banned in industrialised countries many years, or even decades, ago
- they are only binding when a country ratifies it and becomes a “Party” to the convention
- there is no provision for prosecution if a Party violates the convention
- the incorporation of an additional chemical / pesticide can fail when even one Party rejects its inclusion.

Strategic Approach to Chemicals Management targets hazards

2002

In 2006 the first International Conference on Chemicals Management (ICCM) took place in Dubai. The participating representatives from governments and stakeholders adopted *The Strategic Approach to International Chemicals Management* (SAICM). This new global policy and strategy aimed to achieve sound management of chemicals throughout their whole lifecycle in order to protect human health and ecosystems. As with the Code of Conduct for pesticides, SAICM is not a legally binding treaty. However, it constitutes a global political commitment on the part of governments, chemical and pesticide manufacturers, civil society organisations and others. It is a broad global commitment which aims to achieve chemical safety, including pesticide safety.

SAICM is a broad global commitment which aims to achieve chemical safety, including pesticide safety.

The ICCM participants unanimously agreed that the overall objective of SAICM is to "achieve the sound management of chemicals throughout their life cycle so that, by 2020, chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment".[5] With the adoption of SAICM the world once again formally recognized the adverse effects caused by pesticides. According to SAICM it is critical for all stakeholders to promote alternatives in order to reduce and phase out highly toxic pesticides (SAICM/ICCM.1.7).

FAO considers a „progressive ban of highly hazardous pesticides"

2006

Following the intensive efforts to reduce the number of poisonings in developing countries, in 2006 the FAO Council recognised for the first time that certain pesticides could not be used without harm in developing countries. In line with SAICM recommendations (see above), it called for a new policy approach that considered a "progressive ban of highly hazardous pesticides". In November 2006 the FAO Council recommended:

„In view of the broad range of activities envisaged within SAICM, the Council suggested that the activities of FAO could include risk reduction, including the progressive ban on highly hazardous pesticides, promoting good agricultural practices, ensuring environmentally sound disposal of stock-piles of obsolete pesticides and capacity-building in establishing national and regional laboratories."[6]

2008

The Joint Meeting on Pesticide Management (JMPM) developed criteria to define highly hazardous pesticides.

JMPM develops criteria for highly hazardous pesticides

As a result of the FAO Council decision to consider a progressive ban of highly hazardous pesticides, the FAO/WHO Joint Meeting on Pesticide Management (JMPM) developed criteria to define highly hazardous pesticides and recommended that FAO and WHO develop a list based on these criteria, to be updated periodically in conjunction with UNEP.

The criteria are:

- Pesticide formulations that meet the criteria of classes Ia or Ib of the WHO Recommended Classification of Pesticides by Hazard; or
- Pesticide active ingredients and their formulations that meet the criteria of carcinogenicity Categories 1A and 1B of the Globally Harmonized System on Classification and Labelling of Chemicals (GHS); or
- Pesticide active ingredients and their formulations that meet the criteria of mutagenicity Categories 1A and 1B of the Globally Harmonized System on Classification and Labelling of Chemicals (GHS); or
- Pesticide active ingredients and their formulations that meet the criteria of reproductive toxicity Categories 1A and 1B of the Globally Harmonized System on Classification and Labelling of Chemicals (GHS); or
- Pesticide active ingredients listed by the Stockholm Convention in its Annexes A and B, and those meeting all the criteria in paragraph 1 of Annex D of the Convention; or
- Pesticide active ingredients and formulations listed by the Rotterdam Convention in its Annex III; or
- Pesticides listed under the Montreal Protocol; or
- Pesticide active ingredients and formulations that have shown a high incidence of severe or irreversible adverse effects on human health or the environment.[7]

The PAN List of Highly Hazardous Pesticides becomes available online

2009

FAO and WHO have not identified a list of actual pesticides that meet the criteria, as was recommended by JMPM. To assist governments and others and provide a basis for action on pesticide related hazards, PAN International published the *PAN International List of Highly Hazardous Pesticides*, including indicators that PAN recommends to identify HHPs. The guide explains the reasons for selecting these indicators and lists HHPs that meet the criteria.

The List was developed by PAN Germany for PAN International and is available at

► *www.pan-germany.org/gbr/project_work/highly_hazardous_pesticides.html*

It will be updated regularly when major changes in the classification of hazardous pesticides take place.

Even after 25 years of efforts to overcome pesticide poisonings a PAN Report documents widespread ill-health caused by pesticides

2010

Since 1985, the number of regional and international legal instruments and conventions dealing with chemicals has increased by 80%, to approximately 50 agreements.[8] But their success in dealing with pesticide problems has been elusive, as documented in the PAN International publication *Communities in Peril; Global report on health impacts of pesticide use in agriculture.*

The report presents results of a wide-ranging survey of how pesticides are used in the field. PAN groups in Africa, Asia and Latin America carried out surveys in 21 areas of 13 countries. Using community monitoring strategies, they interviewed 2220 women and men small-scale farmers, agricultural workers and rural communities affected by spray drift. The PAN report found that:

- ► highly hazardous pesticides are often used
- ► the ability of workers to protect themselves is extremely limited
- ► those interviewed could neither find nor afford full personal protective equipment
- ► none of those interviewed wore personal protective equipment that met standards in industrialised countries.

The results of the PAN International monitoring report published 2010 indicated that the 25 years of political initiatives to overcome harm caused by hazardous pesticides, since the initial adoption of the Code of Conduct by FAO in 1985, had been largely ineffective.

2010

FAO points out that poor, small-scale farmers cannot make use of protective gear, even after training.

Experts question impacts of training

An explanation for the new policy recommendation calling for a progressive ban on highly hazardous pesticides is set out in the FAO *Guidance on Pest and Pesticide Management Policy Development*, adopted in 2010. It questions the impact of policies that rely only on training in proper pesticide use, pointing out that poor, small-scale farmers cannot make use of protective gear, even after training.

„The impact of training in proper pesticide use continues to be questioned and can not be regarded as a solution for risks associated with the use of highly hazardous products, particularly in developing countries where large numbers of small-scale farmers would have access to these products. Poor small-scale farmers, in particular, generally fail to adopt the use of necessary protective gear after training because of unavailability, costs or discomfort of its use in hot and humid climates. Furthermore, it often proves impossible to reach all potential pesticide users with training, or to restrict pesticide use to only those farmers trained in their use. Therefore, highly hazardous products should be regulated and, where possible, be substituted with less hazardous products. Training, however, remains important to ensure proper use of these less hazardous products."[9]

2012

Calls for global ban of highly hazardous pesticides at ICCM 3

At the third International Conference on Chemicals Management (ICCM), in Nairobi/Kenya, over 60 countries and other participating organisations called for the Conference to support the progressive ban of highly hazardous pesticides and their substitution with safer alternatives. No decision was taken as the item was not on the agenda; however Intercessional regional SAICM meetings are discussing proposals for action on highly hazardous pesticides leading up to the Open-Ended Working Group in late 2014 and the fourth International Conference on Chemicals Management in 2015.[10]

2013

International Code of Conduct on Pesticide Management updated and FAO/ WHO Guidelines on Highly Hazardous Pesticides drafted

The updated and renamed International Code of Conduct on Pesticide Management was originally intended to contain an annex with the JMPM criteria for highly hazardous pesticides. However it was decided instead to develop a separate guidance document, Guidelines on Highly Hazardous Pesticides. The purpose of the guidance document is to provide a framework and practical methods for identifying highly hazardous pesticides, and methods for their control.

The definition of HHPs in the new Code of Conduct on Pesticide Management adopted by FAO and WHO in 2013 is:

*"**Highly Hazardous Pesticides means** pesticides that are acknowledged to present particularly high levels of acute or chronic hazards to health or environment according to internationally accepted classification systems such as WHO or GHS or their listing in relevant binding international agreements or conventions. In addition, pesticides that appear to cause severe or irreversible harm to health or the environment under conditions of use in a country may be considered to be and treated as highly hazardous."*


The impact of training in proper pesticide use continues to be questioned and can not be regarded as a solution for risks associated with the use of highly hazardous products…[9]

Health effects of pesticides

Since the 1940s, the amount of synthetic chemical pesticides used annually worldwide has increased, resulting in considerable human health hazards. At present, due to contamination of the environment and the food chain, presumably all populations worldwide are effected by pesticide contamination and face the threat of chronic health disorders. Particularly at-risk are people employed in agriculture because they are directly exposed to pesticides and frequently suffer from acute as well as chronic poisoning symptoms. A large number of highly hazardous pesticides are easily available, especially in developing countries, and many of them are used in agriculture, often even without appropriate protective clothing.

Even though pesticides are poisons sold in very large amounts accurate global statistics on health effects of pesticides are not available. Estimates range from one million to 41 million people affected every year. Most estimates exclude chronic poisonings and pesticide-related disease; and they reflect only the most severe cases, significantly underestimating unintentional pesticide poisonings because the figures are based primarily on hospital registries. However, most rural poor have no access to hospitals, and doctors and healthcare workers often fail to recognize and report poisoning cases. In Central America the under-reporting rate has been documented as 98%.[11] Surveys based on direct observation of agricultural workers provide estimates of acute health effects ranging from 2% to 10% of workers affected, and observations yield estimates ranging from 9% to 66%.[12]

For further reading:

- ► PAN Asia and the Pacific (2013). Poisoning our Future: Children and pesticides.
- ► PAN North America (2012): A Generation in jeopardy: How pesticides are undermining our children's health & intelligence.
- ► PAN Germany (2012). Pesticides and health hazards: Facts and figures.

Messages from the field

- Pesticide use and handling frequently does not meet legal standards, e.g. while mixing pesticides without any protection.
- Spray mixtures are often prepared without protective clothing and even directly on the user's body, when they carry a backpack sprayer. The risk of direct contact with the pesticide and the resulting damage to their health is high.
- Pesticide equipment frequently leaks onto users spraying without wearing protection.

(Costa Rica. Photo: Fernando Ramiírez, RAP-AL)

- Pesticides and spray equipment are often stored in homes: near food and accessible to children.

(Senegal. Photo: PAN Africa)

- Return systems for empty pesticide containers exist in some regions. But even in the more developed countries, frequently no adequate local system for disposing of empty pesticide containers exists. Large numbers of empty pesticide containers can be seen in irrigation canals or along roads or fields.

(Pesticide mixing area. Photo: Stefan Rösler-NABU)

- Poisonings can occur not only when pesticides are applied during cultivation, but also in the course of packaging of agricultural products. Women are often employed to do this work and risk health damage when they come into contact with agricultural products that have been treated with pesticides.

(Chile. Photo: RAP-AL)

A call for action

Stop Pesticide Poisonings!

Solutions developed in the past cannot be used to address current pesticide-related problems: they have failed to stop pesticide poisonings, especially in developing countries.

Governments should:

- Adopt a pro-health, precautionary approach to regulating pesticides, based on hazard assessment rather than risk assessment
- Phase out highly hazardous pesticides and replace them with the rapid deployment of ecosystem-based approaches to food and fibre production such as agroecology and organics
- Make pesticide manufacturers and distributors legally liable for human health and ecosystem harm
- Levy sales of pesticides to fund extension services that deploy ecosystem-based practices
- Establish no-spray buffer zones between fields that are sprayed and families and communities
- Rapidly implement international conventions related to pesticides
- Enact "right to information" regulations to ensure communities and agricultural workers are provided with full information on the pesticides that they are exposed to or spray.

... adopt a policy to phase out highly hazardous pesticides and support ecosystem-based approaches to agricultural production.

Pesticide industry should:

- Cease the manufacture of highly hazardous pesticides and shift production to biopesticides, biological controls and other safer pest management options
- Adopt the life-cycle concept of pesticide management (Code of Conduct Article 1.7.5)
- Establish collection schemes for empty pesticide containers throughout all rural areas, including take-back for all manufacturers and sellers
- Ensure that pesticides from cradle to grave – production to disposal – are handled only by people who are properly trained.

... cease the manifacture of highly hazardous pesticides.

The food and fibre industry should:

- Use market influence to implement the replacement of highly hazardous pesticides with ecosystem-based approaches to agricultural production, especially in developing countries
- Develop and communicate a plan to support and/or implement the progressive phase-out of highly hazardous pesticides
- Share information on alternatives to highly hazardous pesticides with farmers and the public
- Promote transparency of pesticide use.

... support and share information on alternatives.

For further reading

- PAN International (2010): Communities in Peril: Global report on health impacts of pesticide use in agriculture
- PAN International List of Highly Hazardous Pesticides www.pan-germany.org/gbr/project_work/highly_hazardous_pesticides.html
- PANAP (2013): Poisoning our future: Children and pesticides
- PAN Germany (2012). Pesticides and Health Hazards: Facts and figures.
- PAN North America (2012): A Generation in Jeopardy: How pesticides are undermining our children's health & intelligence
- PAN Germany: Online Information Service for Non-Chemical Pest Management in the Tropics (OISAT). www.oisat.org
- PAN Africa, PAN UK, PAN Asia & Pacific (2008): International Tools for Preventing Local Pesticide Problems: A consolidated guide to the chemical codes & conventions. Edited by Gretta Goldenman and Esther Pozo Vera (European Centre on Sustainable Policies for Human and Environmental Rights

References

1 PAN Northamerica (2013): A Generation in Jeopardy – How pesticides are undermining our children's health & intelligence.

2 FAO and WHO (2013): International Code of Conduct on Pesticide Management.

3 UNEP (1992): Report of the United Nations Conference on the Human Environment, Stockholm, 5-16 June 1992.

4 For more information on the Rotterdam see www.pic.int. For more information on the Stockholm Convention see www.chm.pops.int.

5 For more information on SAICM see: Weinberg J (2008): An NGO guide to SAICM: The approach to international
chemicals management. A framework for action to protect human health and the environment from toxic chemicals.

6 FAO (2006): Report of the Council of FAO, 131st Session, Rome, 20-25 November 2006 (CL 131/REP).

7 FAO and WHO (2008): Report of the 2nd FAO/WHO Joint Meeting on Pesticide Management, 6-8th October 2008, Geneva.

8 PAN International (2010): Communities in Peril: Global report on health impacts of pesticide use in agriculture.

9 FAO (2010): Guidance on Pest and Pesticide Management Policy Development. Rome.

10 PAN and IPEN (2013): Thought starter paper on Highly Hazardous Pesticides and the Strategic Approach to International Chemicals Management submitted by PAN and IPEN. 4th Latin American and Caribbean regional meeting on the Strategic Approach to International Chemicals Management (SAICM) and related consultations, Mexico City, 19 to 22 August 2013.

11 Murray D, Wesseling C, Keifer M, Corriols M, Henao S (2002): Surveillance of pesticide-related illness in the developing world: putting the data to work. J of Int Occ Environ Health 8:243-248.

12 Jeyaratnam, J, Lun KC, Phoon WO (1987): Survey of acute pesticide poisoning among agricultural workers in four Asian countries. Bull WHO, 65: 525-527; Condara G, et al. (1990): Pesticide poisonings among agricultural workers in Bolivia. In: Impact of pesticide Use on Health in Developing Countries. Proceedings of a symposium held in Ottawa, ON, Canada, September 17-20; Kishi M. Hirschorn N, Djadjadisastra M, Satterlee L, Strowman S, Dilts R (1995): Relationship of pesticide spraying to signs and symptoms in Indonesian farmers. Scand J Work Environ Health 21: 124-33; Murphy HH, Sanusi A, Dilts, R, Djajadisastra, M, Hirschorn N, Yuliatingsih S (1999): Health effects of pesticide use among Indonesian women farmers: Part I: Exposure and acute health effects. J Agromedicine 6 (3): 61-85.

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